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ABSTRACT

In this study the responses of 30 colleges seniors who over-achieved in terms of predicted grade point average (GPA), were compared with those made by 38 high ability under-achievers. Graduate Record Examination (GRE) scores and GPA's were compared with those for two groups of students performing as predicted. Over-achievers were found to be particularly dependent on the good opinion of others. Under-achievers prefer to do things in their own way, irrespective of what other people think, and are interested in a wide range of cultural, social and athletic activities. The under-achievers obtained a higher average GRE Area Test score than the over-achievers, their superiority being greatest in Natural Science. This is also the area in which they compared most favorably with the high-achievers. Implications for counseling and graduate school admissions are pointed out. (Author/HS)

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The CSQ-1 and CSQ-2 responses of 30 college seniors who over-achieved in terms of predicted grade point average (GPA), were compared with those made by 38 high ability under-achievers. Their GRE scores and GPA's were compared with those for two groups of students performing as predicted: 105 high-achievers and 136 low-achievers. Over-achievers were found to be particularly dependent on the good opinion of others. Under-achievers prefer to do things in their own way, irrespective of what other people think, and are interested in a wide range of activities: cultural, social and athletic. The under-achievers obtained a higher average GRE Area Test score than the over-achievers, their superiority being greatest in Natural Science. This is also the area in which they compared most favorably with the high-achievers. Implications for counseling and graduate school admissions were pointed out.

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A Comparison of High Ability Under-Achievers with Low Ability Over-Achievers

Carol Pemberton

Of particular concern to any college is the student who on entrance gives every indication of high potential, but whose subsequent grades fall far below predicted success. Some of these students are never graduated, most of those who complete the baccalaureate degree are unable or unwilling to enter graduate school. This study attempts to find in what ways high ability under-achieving students differ from students who make good grades although predictions of achievement were low. Does an external criterion of success in college, such as the Graduate Record Examinations, also depict these students as under-achievers and over-achievers? Were there differences in family background, educational and vocational plans, attitudes and activities between the two groups? What changes took place in the two groups during their college careers? Were the study techniques of over-achievers different from those of under-achievers? Attempts to answer some of these questions follow.

Procedure

Of the 1171 freshmen who entered the University of Delaware in September 1963, 649 (55.4%) were still on campus in April 1967. The correlation between predicted grades and actual grades at the end of three years for these students was .50.[1] Students who fell in the upper left-hand and lower right-hand quadrants of the scattergram, in which predicted grades were plotted against actual grades, were chosen as subjects

for this study. Under-achievers, by this criterion, were defined as those students for whom grades above 2.75 had been predicted, but who actually received a three-year cumulative grade point average (GPA) between 1.80 and 2.39 (N=53). Over-achievers were defined as those students for whom grades below 2.25 were predicted, but who had earned three-year GPA's of 2.80 or higher (N=32). The terms "high predicted-low achieving" and "low predicted - high achieving" describe the two groups, but for the sake of brevity, they will be referred to as under-achievers (UA) and over-achievers (OA). Thirty of the 32 OA and 38 of the 53 UA completed both the experimental form 284C of the College Student Questionnaires - Part 1 during September 1963 and Form 200D of CSQ-2 in April 1967.

Responses made by the UA and the OA to the 284 questions in CSQ-1 and the 200 in CSQ-2 were dichotomized and tabulated in four-fold tables, from which chi squares were calculated. Tables 1, 2 and 3 show all items which yielded chi squares significant at the .10 level or better, the percentages of OA and UA who answered the question in the manner indicated, and the p values. The wording of each item indicates how that particular item was dichotomized.

(Insert Tables 1, 2 and 3)

The GRE Area Test Scores were averaged for those students who had taken them (UA N=36; OA N=29). For comparative purposes the GRE scores and cumulative grade-point averages for two other groups of students were calculated. The first group consists of 105 students for whom grades above 2.75 had been predicted, and who actually earned grades over 2.80. These are referred to as the high-achieving students (HA). The other group comprises students for whom grades below 2.25 were

predicted, and who made grades of 2.39 or below. This criterion yielded a group of low-achievers (LA), whose average grade was not significantly different from that of the under-achievers. However, the average grade for the HA was .26 higher than the average for the OA, a difference which is significant at the .001 level.

The GRE results and grade-point averages for the HA, UA, OA and LA are shown in Table 4. The differences in GPA and GRE scores between these groups, and the significance of these differences, calculated by means of t-tests, appear in Table 5.

(Insert Tables 4 and 5)

Results

Family and Peer Independence and Individualism

From Tables 1 and 3 it is apparent that the over-achievers were particularly dependent on the good opinion of others: peers, parents or instructors. As freshmen, more than half of them thought it was very important to satisfy parental wishes, and as seniors half of them believed that the needs of one's parental family were more important than one's own needs. They tended to consult with parents or friends before making important decisions. Compared with the UA, more of them felt that they should consult with parents. Even as seniors, nearly half of them considered themselves dependent on their parents. Over fifty per cent of the OA would like to have jobs working with people or helping others. Comparatively more of the OA stated that their main source of satisfaction during the past year came from close friendships with students. They also enjoyed closer personal relationships with faculty members.

The under-achievers considered themselves to be relatively independent of their parents and peers. They regarded their own needs as more important than those of their family. They thought it unnecessary to consult with parents about personal decisions, and few of them did. As seniors, 81% considered themselves independent of their parents, compared with 52% of the OA. As freshmen they were particularly individualistic. Compared with the OA, more of them said that they often maintained a point of view despite friends loss of patience; ignored the opinions of others when trying to accomplish something important; and liked to do things in their own way without regard to peer reaction. As seniors the differences between the UA and the OA were not as great in these areas.

The individualism of the UA is also indicated by certain items on the Liberalism and Social Conscience scales. Almost all of them agreed that a welfare state tends to destroy individual intitiative. As freshmen more of them thought that conscientious objectors should be excused from military service, and fewer thought that the government should do more to see that everyone gets adequate medical care. Fewer of them felt strongly that something must be done about juvenile crime, and fewer were disturbed by growing materialism. However, compared with the OA, more of them were disturbed about rigging of bids and prices in some United States industries. All of the UA in this sample thought that the college administration treated them more like children than adults, and most thought that their major department rewarded conformity and punished individualism. Over three-quarters of the UA felt that the college was seldom interested in them as individuals.

Socio-economic Factors

There are some indications that the UA come from higher socio-economic levels and more sophisticated cultural backgrounds than the OA. They discussed foreign films more frequently and were more interested in modern art. They spent less time watching television, more time playing cards, and preferred intellectual magazines. They also regarded themselves as better informed politically than their over-achieving peers. A higher percentage of their fathers had attended college, were in professions requiring at least a bachelor's degree, and attended a greater variety of cultural events during the past year. The UA compared with the OA, expected to spend more money during the school year, and a larger proportion of them lived on campus. All the OA were in-state students, since the University's admission standards are higher for out-of-state students.

Due to the method by which the two groups were chosen, a higher percentage of UA were in the top 10% of their high school class, received honors for scholarly achievement, held student government offices, and participated in extra-curricular science, student government and honor society activities. Compared with the OA, more of them thought their ability to remember what they had read was above average.

Satisfaction with College and College Activities

The OA were, in general, better satisfied with the faculty, administration and their major than the UA. This was a change from high school days, when they expressed greater dissatisfaction with their secondary schools than the UA. However, few of the OA thought that their major department had a great deal of prestige on the campus. Compared with the UA, fewer of them stated that they were enjoying their studies as well as, or better than, they expected.

The UA participated in sports, living group activities and social fraternities to a greater extent than the OA. They also dated more frequently and followed news of athletics more closely. They thought too many students on campus were so wrapped up in their intellectual development that they were social failures. On the other hand the OA thought that too many students were more concerned with their social lives than their studies, and were over-susceptible to popular fads and fashions.

Self-reports about study habits showed only two items which differentiated the OA from the UA. More of the OA claimed that they were successful in finding a suitable place to study, probably because more of them lived at home. On the other hand, after nearly four years of college, 23% of them thought they had an inadequate understanding of the reference facilities of the library, compared with only 8% of the UA. Both groups made similar claims about amount of time spent studying; perceived reading rate; keeping a study schedule; napping and day-dreaming; note-taking while reading; and the use of bibliographical note cards.

Orientation towards College

People see themselves as being in college for a variety of reasons. On both CSQ-1 and CSQ-2 the student is asked to rank four statements according to the accuracy with which each portrays his orientation towards higher education. The four different philosophies can be referred to as the vocational, the academic, the collegiate, and the non-conformist.

(Insert Table 6)

Table 6 shows the percentage of students who endorsed each philosophy, as freshmen, and again towards the close of their senior year. Using freshman figures as the expected frequencies, chi square shows

that change significant at the .001 level occurred between the two administrations of CSQ. The greatest change occurred for the UA, 37% of whom claimed to be academically oriented to college as freshmen, but only 6% of whom made this claim as seniors. The collegiate orientation rose from 46% to 66%, the non-conformist from 3% to 11%, and the vocational from 14% to 17%.

The attitudes of the over-achievers did not change as greatly. From their freshman to their senior year, there was an increase of 11% in the endorsement of the collegiate orientation. The percentage claiming to be non-conformist remained the same (4%), the vocational decreased by 7%, and the academic by only 3%.

Educational and Vocational Plans

As freshmen, 79% of the UA felt certain of graduation in their contemplated field, compared with 64% of the OA. As seniors, however, only 58% of the UA were in the major department in which they had enrolled as freshmen, whereas 67% of the OA had continued in their original field. As freshmen 74% of the UA thought they might continue their education beyond the bachelor's level, compared with 38% of the OA. As seniors only 13% of the UA said they were going to attend graduate school, whereas 52% of the OA had such plans.

Changes have also occurred in the type of occupation preferred. As freshmen, approximately one-third of the UA and one-fourth of the OA thought they would like a business or professional life. As seniors, almost two-thirds of the UA gave this preference, while the percentage for the over-achievers remained unchanged. As freshmen, 29% of the UA thought

they would like an academic life, but as seniors, only 12% gave this preference. During the same period the percentage of OA who chose an occupation in this area increased from 30% to 43%.

More than half of the UA stated that the most important job requirements were "opportunity to use my special abilities' and 'freedom to be creative." Less than one-fourth of the OA regarded these requirements as important. As seniors 16% of the UA endorsed 'prospects of above-average income" as the most important job requirement, but none of the OA did. The OA preferred jobs which entail 'working with people" or 'being helpful to others.'

Graduate Record Examination Results

From Tables 4 and 5 it can be seen that the under-achievers and the low-achievers made essentially the same grades. However, the UA scored 80 points higher on the GRE composite than the LA. In spite of the fact that the UA's average grade was .81 lower than that for the OA, their composite GRE score was 39 points higher, and the score on the Natural Science Area Test was 74 points higher, a difference significant at the .001 level. However, the under-achievers did not make GRE scores as high as those made by the high-achievers, the most marked difference being the superiority of the high-achievers in the Humanities area.

Over-achievers obtained a composite score 41 points higher than the low-achievers. Good grades, therefore, seem to show that a certain minimum of general information has been acquired. However, poor grades may be associated with either high or low GRE scores.

Discussion

Results of this study should be interpreted cautiously, since the number of subjects is small. However, the fact that items which distinguished under-achievers from over-achievers make good sense psychologically, increases one's confidence in the findings.

Of concern is the conclusion that the emphasis (real or imagined) placed on grades has lowered the intellectual sights of an able group of students. Graduate Record Examination results, and an interest in cultural matters and creative activities, indicate that the under-achievers should be capable of benefiting from educational experiences beyond the bachelor's level. Yet only 13% of these students were planning to attend a graduate or professional school. Perhaps the current practice of setting cut-off points for graduate school admission or employment purposes in terms of grades should be discontinued. As Hoyt (1966) has pointed out, grades have characteristically proved to be poor predictors of adult accomplishment. Success on many jobs depends largely on good interpersonal relations, given a necessary minimum level of ability. Since the well-informed person, active in social, athletic and cultural activities, may be one who made low grades in college, the lack of correlation between various measures of vocational achievement and grades is not surprising.

As has been found in two previous studies (W.A. Pemberton, 1963; C. Pemberton, 1966) the majority of under-achievers are men; 74% in this study. As entering freshmen, 68% of the UA were enrolled in the phyical sciences or engineering. Only 13% of the OA were in these two curriculum groups. As seniors, 42% of the UA were in these two fields, and

17% of the OA. Because of their superiority in high school, the UA were probably encouraged by parents, teachers or counselors to enroll in the physical sciences. A more careful consideration of the students' own desires, and of personality factors, may have prevented a wrong curriculum choice, and the subsequent lowering of educational aims.

Previous studies indicate that objective tests may be better predictors of success in graduate school than college grades (Creager, 1965; Pitcher and Winterbottom, 1965). If graduate schools are using test results, rather than grades, in selecting students, this fact should be publicized. This may encourage students with low grades but good potential to consider continuing their education beyond the bachelor's level.

The fact that specific study techniques did not differentiate the over-achievers from the under-achievers also has practical implications. It indicates that programs aimed at improving study techniques are likely to be less effective in raising student performance than programs aimed at changing attitudes.

Summary

This report deals with the CSQ-1 and CSQ-2 responses which differentiated a group of potentially able under-achievers from a group of over-achievers initially predicted to make low grades. Results indicate that over-achievers are particularly dependent on their families and peers. People's opinions are very important to them, and they seldom do anything without first considering how others will react. They are better satisfied with the faculty, advisement, courses and facilities in their major, and with their own academic standing, than are the

under-achievers. Their stated study techniques do not differ markedly from those of the under-achievers. They do not participate in extra-curricular activities to as great an extent as the under-achievers, and a smaller percentage of the men are fraternity members. As seniors 52% of the over-achievers are definitely planning to continue their education in a graduate or professional school. As W.A. Pemberton (1963) stated: "Over-achieving students are other-directed, not self-directed; they seem to achieve because it is expected of them. They are not prone to self-analysis and introspection. Learning, for these students, is something rather to be endured than enjoyed (p. 40)."

Under-achievers are independent. They like to do things in their own way, and often maintain a point of view in opposition to their friends. They express interest in foreign films and modern art. They play cards more often and watch television less frequently than the over-achievers. Using their special abilities, and being creative and original are the two most important job requirements for them. There has been a marked change in their orientation towards college. Between their freshman and senior years the percentage who were "academically" oriented has dropped from 37% to 6%, and the percentage who claimed that their orientation was "collegiate" increased from 46% to 66%. The under-achievers are more apt to be men than women, and to have started their college career in engineering or the physical sciences. In spite of their low grades, their average score on the GRE Area Tests is significantly higher than that for the over-achievers.

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Footnotes

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1. Students who were dropped or left school voluntarily during the intervening three years were not included in this calculation, so that this r appears somewhat low.

Table 1

Items from the Five Scales common to CSQ-1 and CSQ-2 which differentiated Under-Achievers from Over-Achievers

Item	CSQ-1 U.A.%	CSQ-1 O.A.%	CSQ-1 p	CSQ-2 U.A.%	CSQ-2 O.A.%	CSQ-2 p
Family Independence						
Have seen parents once a week or more frequently during past year (on CSQ-1 "intend to see")	14	43	.01	25	59	.01
The needs of a person's parental family are more important than his own needs	67	80	n.s.	25	50	.05
Members of your family should hold similar religious beliefs	41	73	.01	56	89	.005
Very important to satisfy parental wishes	19	52	.005	14	30	n.s.
Almost always consult with parents about important personal decisions	16	37	.10	6	39	.001
Definitely feel that I should consult with parents	16	47	.01	8	24	.10
Considers himself to be dependent on parents	41	60	n.s.	19	48	.025
Peer Independence						
Often maintain a point of view against impatient peers	53	30	.10	41	32	n.s.
Often seem to ignore opinions of other students when trying to accomplish something important to you	84	63	.10	73	69	n.s.
Like to do things in own way without regard to peer reaction	51	30	.10	59	40	n.s.
Usually consult with close friends about important decisions	44	77	.01	43	67	.10

Table 1 continued

Item	CSO-1 U.A%	CSO-1 O.A%	p	CSO-2 U.A%	CSO-2 O.A%	p
Liberalism						
Agree that government should do more to see that everyone gets adequate medical care	43	64	.10	58	66	n.s.
Conscientious objectors should be excused from military service	62	37	.05	56	46	n.s.
Agree welfare state tends to destroy individual initiative	86	73	n.s.	92	74	.10
Cultural Sophistication						
Rarely or never discuss foreign films	65	87	.05	51	68	n.s.
No interest in modern art	30	50	.10	73	84	n.s.
Social Conscience						
Feel strongly that something must be done about juvenile crime	51	79	.025	55	63	n.s.
Disturbed about growing materialism accompanied by declining concern for spiritual values and other moral considerations	65	77	n.s.	71	93	.025
Disturbed about rigging of bids and prices in some U.S. industries	95	80	.10	84	75	n.s.

Table 2

Items from the Six Scales found only in CSQ-2, which differentiated Under-Achievers from Over-Achievers

Item	CSQ-2 U.A.%	CSQ-2 O.A.%	p
Satisfaction with Faculty			
More than half the faculty members who have taught me in the past year were superior	41	70	.025
Am enjoying my studies as well as or better than I expected this term	87	60	.025
Instructors have been successful in challenging me to produce to the limit of my intellectual and creative capacities	25	50	.05
Satisfaction with Administration			
General impression of courtesy and efficiency of administrative or personnel divisions here reasonably positive or very positive	11	29	.10
Agree that college administration here generally treats students more like children than adults	100	83	.01
Satisfaction with Major			
Practically none or weak "group spirit" among students in my department	89	72	.10
Agree major department tends to reward conformity and punish individualism	72	52	.10
Fairly or very satisfied with academic standing in major department	27	90	.001
Choice of courses and facilities in major adequate	64	86	.05
Major department has fairly high or a great deal of prestige on this campus	56	29	.05

Table 2 continued

Item	CSQ-2 U.A.%	CSQ-2 O.A%	P
Study Habits			
Successful in finding a comfortable place to study, free from distractions	25	45	.10
Inadequate understanding of reference facilities of the library	8	23	.10
Extra-curricular Involvement			
Follow news of varsity and intramural athletics closely	70	50	.10
Participated in two or more sports during past year	35	10	.025
Have participated in the organized activities of my living group fairly or very extensively	57	34	.10
Member of a social fraternity	50	20	.10
Satisfaction with Students			
Too many students so wrapped up in intellectual development they are social failures	50	16	.01
Too many students over-susceptible to popular fads and fashions	33	66	.01
Too many students more concerned with social lives than studies	57	83	.025

Table 3

Miscellaneous Items from CSQ-1 or CSQ-2 which differentiated Under-Achievers from Over-Achievers[1]

Item	CSQ-1 U.A.%	CSQ-1 O.A.%	CSQ-1 P	CSQ-2 U.A.%	CSQ-2 O.A.%	CSQ-2 P
Definitely plan to continue education in a graduate or professional school (CSQ-1 definitely and probably)	74	38	.005	13	52	.001
Prefer a business or professional life as occupational future	32	23	n.s.	63	23	.005
Most important job requirement is working with people or being helpful to others	19	57	.005	19	54	.001
Most important job requirement is opportunity to use abilities, or freedom to be creative	53	23	.025	51	21	.025
Most important job requirement prospects of above average income	6	7	n.s.	16	0	.05
Expected expenditure for year over $1,600	55	12	.001	71	19	.001
Desire education beyond four years of college	68	47	.10			
Have found or expected a great deal of competitiveness for grades among classmates	47	63	n.s.	68	86	.10
Greatest personal satisfaction from close friendships with students	5	3	n.s.	9	23	.10
Don't expect any major problems	22	7	.10	27	30	n.s.

[1] Items which have only one set of figures occurred only on one form of CSQ

Table 3 continued

Item	CSQ-1 U.A.%	CSQ-1 O.A.%	CSQ-1 P	CSQ-2 U.A.%	CSQ-2 O.A.%	CSQ-2 P
Live with parents, spouse or non-students				16	38	.05
Cumulative GPA since being in college B- or better				22	93	.001
Grade average last term B- or better				54	93	.001
Close personal relationships with two or more faculty members				24	47	.05
This college is seldom interested in me as an individual				76	57	.10
Location of home in this state	35	100	.001			
Estimated class standing in high school in top 10%	64	19	.001			
Received three or more honors for scholarly achievement in high school	34	10	.025			
Held two or more minor student government offices	64	42	.10			
Participated in extra-curricular science activities in high school	62	39	.05			
Participated in student government activities in high school	60	39	.10			
Participated in honor society activities in high school	55	23	.01			
Participated in hobby groups in high school	33	10	.025			
Perceived ability to remember what read below average	12	42	.005			
Generally dissatisfied with secondary school	14	30	.10			
Attach no importance or only moderate amount to getting good grades	14	16	n.s.	54	28	.05

Table 3 continued

Item	CSQ-1 U.A.%	CSQ-1 O.A.%	CSQ-1 p	CSQ-2 U.A.%	CSQ-2 O.A.%	CSQ-2 p
Satisfied with grades during the past academic year				46	80	.005
Think grades under-represent true ability				64	25	.005
During past academic year have dated once a week or more	55	37	n.s.	78	52	.05
View television less than: hr. per day (CSQ-1); hr. per wk (CSQ-2)	66	43	.10	51	17	.005
Spend less than an hour per week playing cards				43	83	.005
Strongly approve of social fraternities in general				50	23	.05
If had hour of spare time would pick up Time or Saturday Review				54	31	.10
If had hour of spare time would pick up Mademoiselle				3	21	.025
Have no idea how political views compare with those of faculty				30	52	.10
Father's occupation in a profession requiring an AB	29	10	.10			
Father's education includes some college or more	62	40	.10			
Have attended religious services in past year or so about once a week or more	63	70	n.s.	19	43	.05
Father has attended four or more kinds of cultural events in the past year	40	18	.10			
Like assignments requiring original research	76	48	.025	38	31	n.s.
Fairly or very well informed in regard to political affairs	66	55	n.s.	68	47	.10

Table 4

GRE Scores and Cumulative Grade Point Averages

for High-Achievers, Under-Achievers, Over-Achievers and Low-Achievers

Group		S.S.		Hum.		N.S.		Av.		GPA	
	N	M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D
High-achievers (HA)	105	586	76.5	603	98.6	603	84.1	597	63.0	3.28	.33
Under-achievers (UA)	36	556	66.8	544	91.4	592	70.7	564	57.4	2.21	.11
Over-achievers (OA)	29	530	95.2	528	67.5	518	78.4	525	59.6	3.02	.17
Low-achievers (LA)	136	475	75.0	474	81.4	502	85.9	484	52.4	2.19	.15

Table 5

Differences in GRE Scores and GPA between High-Achieving, Under-Achieving, Over-Achieving and Low-Achieving Students

Groups compared	S.S.	p	Hum.	p	N.S.	p	Av.	p	GPA	p
HA - UA	30	.025	59	.001	11	n.s.	33	.005	1.07	.001
HA - OA	56	.005	75	.001	85	.001	72	.001	.26	.001
HA - LA	111	.001	129	.001	101	.001	113	.001	1.09	.001
UA - OA	26	n.s.	16	n.s.	74	.001	39	.01	-.81	.001
UA - LA	81	.001	70	.001	90	.001	80	.001	.02	n.s.
OA - LA	55	.005	54	.001	16	n.s.	41	.001	.83	.001

Table 6

Changes in Responses to the Four Orientation Questions

Orientation	U.A. N=35	O.A. N=28
	Freshman percentages	
Vocational	14	25
Academic	37	39
Collegiate	46	32
Non-conformist	3	4
	Senior percentages	
Vocational	17	18
Academic	6	36
Collegiate	66	43
Non-conformist	11	4